

REMARKS

Claims 1 to 3, 5, 8 to 17, and 19 to 21, as amended, appear in this application for the Examiner's review and consideration. Claims 4, 6, 18, 22, and 23 have been canceled without prejudice. The amendments are fully supported by the specification and claims as originally filed. Therefore, there is no issue of new matter.

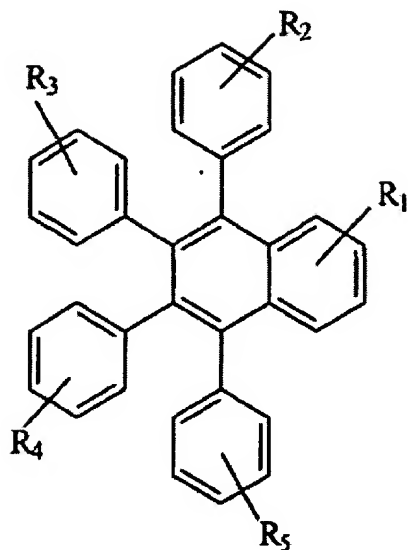
Claims 10 to 13 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement for the reasons set forth on page 2 of the Office Action.

In response Applicants submit that claims 10 and 12 and paragraph [0051] of the specification have been amended to change "highest unoccupied molecular orbital" to --highest occupied molecular orbital--. Applicants submit that the recitation of "highest unoccupied" was a typographical error, and that one of ordinary skill in the art would understand that the only correct term for claims 10 and 12 and paragraph [0051] of the specification was "highest occupied." Moreover, support for the amendments to the claims and specification can be found in paragraph [0028] of the specification.

Therefore, as the claims are fully enabled by the specification, Applicants respectfully request the Examiner withdraw the rejection of claims 10 to 13 under 35 U.S.C. §112, first paragraph.

Claims 1 to 4, 6, 8 to 18, and 20 to 22 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the reasons set forth on page 3 of the office Action.

In response, Applicants submit that claims 1, 12, and 14 have been amended to specifically recite that the aromatic hydrocarbon material has the structure



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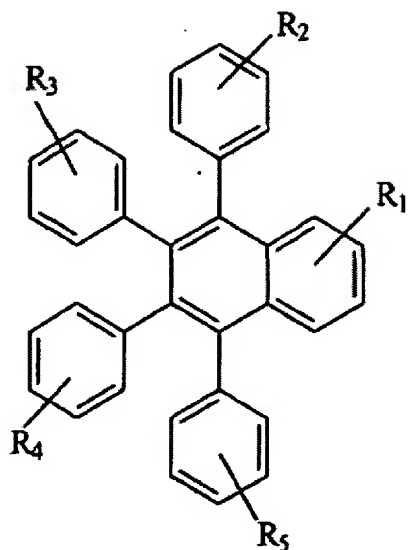
As this compound has a structure comprising six phenyl rings, where two of the rings are fused, one of ordinary skill in the art would understand that the material was an aromatic hydrocarbon material.

With regard to the antecedent basis for “the hole transporting material” in claims 10 and 12, Applicants submit that those claims have been amended to recite “a hole transporting material.” Therefore, an antecedent is not required.

Therefore, the claims particularly point out and distinctly claim the subject matter Applicants regard as the invention. Accordingly, Applicants respectfully request the Examiner withdraw the rejection of claims 1 to 4, 6, 8 to 18, and 20 to 22 under 35 U.S.C. §112, second paragraph.

Claims 1 to 3, 6, 7, and 9 to 13 were rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Adamovich et al, MRS Spring Meeting, April 2002, (Adamovich) for the reasons set forth on page 4 of the Office Action.

In response, Applicants submit that the present invention, as recited in claim 1, is directed to a device, comprising: an anode, a cathode, a first organic layer disposed between the anode and the cathode, and a second organic layer disposed between the first organic layer and the cathode, where the second organic layer is in direct contact with the first organic layer. The first organic layer comprises a material that produces phosphorescent emission when a voltage is applied between the anode and the cathode. The second organic layer comprises an aromatic hydrocarbon material, having the structure



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where R₁ to R₅ each represent no substitution, mono-, di-, or tri-substitution, and where the substituents are the same or different, and each is selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, heteroalkyl and substituted aryl. Claim 12 differs from claim 1 in that claim 12 recites that the aromatic hydrocarbon material of the second organic layer has a highest occupied molecular orbital that is at least 0.81 eV less than the highest occupied molecular orbital of a hole transporting material in the first organic layer

As stated in the Office Action, Adamovich discloses a device comprising a layer of OPCOT or SP. Adamovich does not disclose the aromatic hydrocarbon material of the presently claimed invention.

Therefore, as Adamovich does not disclose a device, comprising the aromatic hydrocarbon material of the presently claimed invention, Adamovich does not anticipate the present claims. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3, 6, 7, and 9 to 13 under 35 U.S.C. §102(b) over Adamovich.

Claims 1 to 3, 6, 7, and 9 to 13 were rejected under 35 U.S.C. §§102 (e) and (a), as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0068528 to Thompson et al. (Thompson) for the reasons set forth on pages 4 and 5 of the Office Action.

Thompson discloses organic light emitting devices, having blocking layers that block electrons, holes, and/or excitons. The devices may comprise a layer containing OPCOT or SP.

Thompson does not disclose a device, comprising the presently claimed aromatic hydrocarbon material, and, thus, does not disclose the presently claimed invention.

Therefore, as Thompson does not disclose the presently claimed invention, Thompson does not anticipate the present claims. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3, 6, 7, and 9 to 13 under 35 U.S.C. §§102(e) and (a) over Thompson.

Claims 1 to 3, 9, 14 to 17, 20 and 21 were rejected under 35 U.S.C. §102(a), as allegedly being anticipated by Okumoto et al., Chem, Mater. Vol 15, pp 669-707 (2003) (Okumoto) for the reasons set forth on pages 5 and 6 of the Office Action.

Okumoto discloses the use of TBB, TFB and TFPB. Okumoto does not disclose a device, comprising a layer containing the aromatic organic material, as presently claimed. Therefore, Okumoto does not disclose the presently claimed invention.

Therefore, as Okumoto does not disclose the presently claimed invention, Okumoto does not anticipate the present claims. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3, 9, 14 to 17, 20 and 21 under 35 U.S.C. §102(a) over Okumoto.

Claims 14 to 17 and 20 to 23 were rejected under 35 U.S.C. §103 (a) as allegedly being unpatentable over Adamovich or Thompson for the reasons set forth on page 7 of the Office Action.

In response, as discussed above, Adamovich and Thompson disclose devices comprising OPCOT or SP. Adamovich and Thompson do not disclose or suggest the aromatic hydrocarbon material of the presently claimed invention.

Therefore, Adamovich and Thompson do not disclose or suggest the presently claimed invention, and the present claims are not obvious over those references. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 14 to 17 and 20 to 23 under 35 U.S.C. §103 (a) over Adamovich and Thompson.

Claims 1 to 3, 8, 9, 14 to 17, 20 and 21 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,830,829 to Suzuki et al. (Suzuki) for the reasons set forth on pages 7 and 8 of the Office Action.

Suzuki discloses the use of aromatic hydrocarbon materials in organic luminescence devices. Suzuki does not disclose or suggest the aromatic hydrocarbon material of the presently claimed invention.

Therefore, Suzuki does not disclose or suggest the presently claimed invention, and the present claims are not obvious over that reference. Accordingly, it is respectfully requested that the Examiner withdraw the rejection of claims 1 to 3, 8, 9, 14 to 17, 20 and 21 under 35 U.S.C. §103(a) over U.S. Patent No. 6,830,829 to Suzuki.

Claims 1 to 5, 7 to 9, 14 to 17, 19 to 21, and 23 were provisionally rejected under 35 U.S.C. §101, as allegedly claiming the same invention as that of claims 1 to 5, 7 to 9, 14 to 17, 23 and 44 of copending U.S. Patent Application No. 10/785,287 (the '287 application) for the reasons set forth on pages 9 and 10 of the Office Action, and claims 1 to 4, 6, 8, 9, 14 to 18, and 20 to 22 were provisionally rejected under the doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1 to 4, 6, 8, 9, 14 to 18, 20 to 22, and 44 to 50 of the '287 application for the reasons set forth on pages 10 and 11 of the Office Action.

In response, Applicants submit that, upon receipt of an Office Action in the '287 application, applicants will amend the claims of that application to avoid any double patenting issues. Therefore, it is respectfully requested that the Examiner withdraw the provisional rejections of claims 1 to 5, 7 to 9, 14 to 17, 19 to 21, and 23 under 35 U.S.C. §101 and claims 1 to 4, 6, 8, 9, 14 to 18, and 20 to 22 under the doctrine of obviousness-type double patenting.

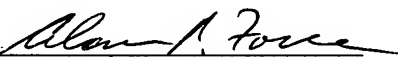
Applicants thus submit that the entire application is now in condition for allowance, an early notice of which would be appreciated. Should the Examiner not agree with Applicants' position, a personal or telephonic interview is respectfully requested to discuss any remaining issues prior to the issuance of a further Office Action, and to expedite the allowance of the application.

No fee is believed to be due for the filing of this Amendment. Should any fees be due, however, please charge such fees to Deposit Account No. 11-0600.

Respectfully submitted,

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